

a concentration of germanium in said buffer layer being graduated so that it increases proceeding from a substrate side of said buffer layer to a relax layer side of said buffer layer,

a concentration of germanium in said relax layer being substantially the same as the concentration of germanium at said relax layer side of said buffer layer,

said p-channel field effect region having a silicon-germanium compound layer formed on said substrate and a silicon cap layer formed on said silicon-germanium compound layer,

drain and source regions of said n-channel field effect device being within said second silicon epitaxial layer formed on said first silicon layer and said first silicon layer on said relax layer, and

drain and source regions of said p-channel field effect device being within said silicon-germanium compound layer formed on said substrate and said silicon cap layer formed on said silicon-germanium compound layer.

5. (New) The semiconductor device of claim 4 wherein, a ratio of germanium to silicon in said buffer layer increase from 0.0 to less than about 0.5 proceeding from said substrate side to said relax layer side of said buffer layer.

6. (New) The semiconductor device of claim 5 wherein, the ratio of germanium to silicon in said buffer layer is not greater than about 0.3.

7. (New) The semiconductor device of claim 4 wherein said buffer layer is about 1.68 micrometers thick and said relax layer is about 0.6 micrometers thick.

8. (New) The semiconductor device of claim 7 wherein said silicon-germanium compound layer in said p-channel field effect region has a thickness of about 100 nanometers.

9. (New) The semiconductor device of claim 4 wherein said silicon-germanium compound layer has a ratio of germanium to silicon of about 0.1 to less than about 0.8.